



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
OSB2000-0142

July 5, 2000

Mr. Lawrence C. Evans  
U.S. Army Corps of Engineers  
Portland District, CENWP-CO-GP  
P.O. Box 2946  
Portland, Oregon 97208-2946

Re: Revetment Reconstruction on Nehalem River, Tillamook County, Oregon (Permit ID No. 1998-01291)

Dear Mr. Evans:

Enclosed is the National Marine Fisheries Service's (NMFS) Biological Opinion (Opinion) for the proposed issuance of a Clean Water Act section 404 permit (Permit ID No. 1998-01291) authorizing Mr. James Fluge to reconstruct and riprap 74 feet of bankline on the Nehalem River (River Mile 3.6) near Nehalem, Oregon. The U.S. Army Corps of Engineers requested formal consultation in a letter dated April 13, 2000. NMFS received the request for consultation and a biological assessment describing the proposed action on April 14, 2000. Mr. Fluge has applied for the subject permit. The designer of the proposed project was HLB & Associates, Inc., of Manzanita, Oregon. A contractor has not been selected.

This Opinion considers the potential effects of the proposed action on Oregon Coast coho salmon (*Oncorhynchus kisutch*), which occur in the proposed project area. Oregon Coast coho salmon were listed as threatened under the ESA on August 10, 1998 (63 FR 24998), and critical habitat was designated on February 16, 2000 (65 FR 7764). NMFS concludes that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify designated critical habitat. Included in the enclosed Opinion is an incidental take statement with terms and conditions to minimize the take of the subject species.



Questions regarding this letter should be directed to Rob Markle of my staff in the Oregon State Branch Office at (503) 230-5419.

Sincerely,

A handwritten signature in black ink, reading "William Stelle, Jr." in a cursive script.

William Stelle, Jr.  
Regional Administrator

# Endangered Species Act

## Section 7 Consultation

### **Biological Opinion**

Revetment Reconstruction on Nehalem River, Permit ID No. 1998-01291,  
Tillamook County, Oregon

Agency: U.S. Army Corps of Engineers, Portland District

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: July 5, 2000

Refer to: OSB2000-0142

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## I. BACKGROUND

Nehalem River, Tillamook County, a 74-foot section of rock wall and a floating dock washed away during February 1996 flooding at river mile 3.6 near Nehalem, Oregon. The wall protected the seasonal residence of Mr. James Fluge. In 1998, Mr. Fluge replaced the wall with an 8-foot tall concrete bulkhead and constructed a 700-square foot dock without Tillamook County (County) permits. Both structures are contrary to County standards. Currently, Mr. Fluge proposes to replace the bulkhead with vegetated riprap and reduce the size of the dock to 200 square feet. Accordingly, Mr. Fluge (Applicant) has applied for a permit from the U.S. Army Corps of Engineers (Corps) for the project. The Corps proposes to issue the permit (Permit ID No. 1998-01291), pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, authorizing the Applicant to complete the proposed action.

The Nehalem River supports Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*), which were listed as threatened pursuant to the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) on August 10, 1998 (63 FR 42587). The Nehalem River is included within designated critical habitat for this species (February 16, 2000, 65 FR 7764).

The Corps determined that issuance of the subject permit would likely adversely affect OC coho salmon and requested formal consultation in a letter dated April 13, 2000. NMFS received the consultation request, along with a biological assessment, on April 14, 2000. The objective of this Opinion is to determine whether the proposed action is likely to jeopardize the continued existence of OC coho salmon or destroy or adversely modify designated critical habitat for this species.

## II. PROPOSED ACTION

The concrete bulkhead was constructed to replace a revetment constructed 50 to 60 years ago of hand-stacked rock. Most of the proposed work would be isolated from the wetted channel by the existing bulkhead. The Applicant would contour the bankline to a 1:1.5 (vertical:horizontal) slope with an *irregular* face. A geotextile liner would be secured to the slope and overlain with a 6-inch layer of pit-run rock. Rock, 18 to 24 inches in diameter, would be placed on top of the pit-run rock. As proposed, pit-run rock with “fines” would form the top layer. Willows would be planted in the structure on 2-foot centers. The Applicant would then remove 7 vertical feet of the bulkhead leaving the footing and a one-foot vertical section in place. The remnant wall would function to key in the toe of the riprap embankment. The dock would be reworked to eliminate 500 square feet of surface area. The remaining dock would have a surface area of 200 square feet. All work is proposed to occur during an ODFW sanctioned in-water work window, July 1-September 15.

### III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

Although there are currently limited data to assess population numbers or trends, NMFS believes that all coho salmon stocks comprising the OC coho salmon ESU are depressed relative to past abundance. The status and relevant biological information concerning OC coho salmon are well described in the proposed and final rules from the Federal Register (July 25, 1995, 60 FR 38011; and May 6, 1997, 62 FR 24588, respectively), and Weitkamp *et al.* (1995).

Abundance of wild coho salmon spawners in Oregon coastal streams declined during the period from about 1965 to roughly 1975 and has fluctuated at a low level since that time (Nickelson *et al.* 1992). Spawning escapements for this ESU may be at less than 5% of abundance from that in the early 1900s. Contemporary production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average spawner abundance has been relatively constant since the late 1970s, but preharvest abundance has declined. Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate danger of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995).

Timing of adult coho salmon river entry is largely influenced by river flow. Coho salmon normally wait for freshets before entering rivers. In the Nehalem River, adults return between late-September and mid-January (J. Sheahan, ODFW, personal communication, 3 May 2000) with peak upstream migration usually occurring in October when the fall rains return (Weitkamp *et al.* 1995). OC coho salmon spawn in the Nehalem River basin between early-November and late-January with peak spawning occurring in late November to early December (Weitkamp *et al.* 1995). Juvenile coho salmon rear for one year in fresh water before migrating to the ocean. Juvenile OC coho salmon migrate out of the Nehalem River basin as smolts between early-March and mid-May (J. Sheahan, ODFW, personal communication, 3 May 2000). Peak outmigration typically occurs in mid-April or earlier (Weitkamp *et al.* 1995).

Critical habitat for OC coho salmon includes Oregon coastal river basins (freshwater and estuarine areas) between Cape Blanco and the Columbia River. Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas—areas adjacent to a stream that provides the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter—below longstanding, natural impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) and several dams that block access to former coho salmon habitat. The proposed action would occur in designated critical habitat for OC coho salmon.

#### **IV. EVALUATING PROPOSED ACTIONS**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify designated critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. If NMFS concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, a jeopardy analysis by NMFS considers direct or indirect mortality of fish attributable to the action. A critical habitat analysis by NMFS considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of OC coho salmon under the existing environmental baseline.

##### **A. Biological Requirements**

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the biological requirements of the species most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho salmon for ESA protection and also considers new data available that are relevant to the determination (Weitkamp *et al.* 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their

capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing, and migration. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

## **B. Environmental Baseline**

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation, the action area includes the affected bankline and areas that may be affected by increased turbidity during construction, including upstream areas potentially impacted during a flood tide.

The bulk of production for the OC coho salmon ESU is skewed to its southern portion where the coastal lake systems (e.g. Tenmile, Tahkenitch, and Siltcoos Basins) and the Coos and Coquille Rivers are more productive. The proposed action area is located in the northern half of the ESU where production is more depressed and habitat in the action area is underseeded. OC coho salmon in the Nehalem River primarily use this reach as a migration corridor.

The Nehalem River originates in the coast mountain range and flows 118.5 miles to the Pacific Ocean (PSU 1999). The watershed is 855 square miles and predominately consists of coniferous forests. Lower reaches include marshlands and estuaries. Most precipitation in the Nehalem River Basin occurs as rain, with approximately 78 percent falling from October through March (WRCC 2000). The flooding in February 1996 was the result of a rain-on-snow event where snow accumulated at low elevations and was followed by warm rains. Streamflow data at river mile 13.5 provided by USGS (2000), indicates the February 1996 flow was a record 70,300 cubic feet per second, or 132 percent of second highest annual peak on record (53,400 cfs) for the period of 1940 to 1998. This peak was 244 percent of the annual average peak flow (28,060 cfs; n=59)(USGS 2000).

State and private lands represent 98 percent of the land holdings within the watershed. The state of Oregon owns 38 percent and private parties own 60 percent. The remaining 2 percent is under Federal ownership (Bureau of Land Management).



The dominate land-use within the Nehalem watershed is forestry (92% of land). Private timber company lands comprise 47 percent of the watershed. Longview Fibre (21%) and Willamette Industries (17%) are the largest private land owners (PSU 1999).

The lower reach of the Nehalem River flows through diked pastureland and is heavily fished for salmon and coastal cutthroat trout. Riparian vegetation along this reach is sparse. The proposed project site is located in a small residential development of approximately 16 homes. Some form of bank protection, retaining walls or riprap, have been installed along most of the lots in the development.

The mouth to Cook Creek reach of the Nehalem River appears on the Oregon Department of Environmental Quality (ODEQ) 303(d) List of Water Quality Limited Water Bodies for temperature (ODEQ 2000). Fourteen of 27 (52%) sample values collected during summer exceeded the temperature standard (64°F). Exceedences were recorded in 1980, 1982, and 1984 to 1993 between water years 1979 to 1993. The maximum observed temperature was 70.7°F.

## **V. ANALYSIS OF EFFECTS**

### **A. Effects of Proposed Actions**

Rivers are dynamic systems that perpetually alter their courses in response to multiple physical criteria. Residences and other structures constructed along waterways are subject to flooding and undercutting as a result of these natural changes in course. Structural embankment hardening has been a typical means of protection for structures located along waterways. Impacts to waterways from revetment installation are simplification of stream channels, alteration of hydraulic processes, and prevention of natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the subject site and contribute to stream velocity acceleration. As erosive forces impact different locations and bank hardening occurs in response, the river eventually attains a continuous fixed alignment lacking habitat complexity (COE 1977).

Fish habitat is enhanced by the diversity of habitat at the land-water interface and adjacent bank (COE 1977). Streamside vegetation provides shade which reduces water temperature. Overhanging branches provide cover from predators. Organisms that fall from overhanging branches may be preyed upon by fish. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events, and retain bed load materials.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3:1 or areas of high velocity (COE 1977). Biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort. Combining structural measures (i.e. sloped riprap or

mechanically stabilized earth walls) and vegetation is preferable to an unvegetated structural solution. The least preferable alternative is a vertical bulkhead (COE 1977).

The proposed action is replacement of a vertical concrete bulkhead with a vegetated rock slope and a size reduction of a floating dock. All bank work is proposed to occur in the dry. Soils exposed while pulling back the bank and fill materials placed adjacent to the stream channel could be carried into the Nehalem River during a rain event. To minimize the potential for sediment entry into the river, the existing bulkhead would remain in place until the riprap slope is constructed. Bulkhead removal would occur in the dry during periods of low tide. Moreover, the proposed project would occur during the dry season (July 1-September 15), further reducing the potential for heavy contributions of sediment due to soil disturbance from construction activities. The dock is currently off-site. Dock reconfiguration is not anticipated to pose any impact concerns beyond assuring proper containment and disposal of materials.

As with all construction activities, there is potential for accidental release of fuel, oil, and other contaminants to the waterway. To minimize this potential, no equipment would enter below the mean high-high water elevation. All equipment would work from above the bankline and would be serviced away from any water bodies. Best Management Practices (BMPs) required by the Corps and/or the State of Oregon would further minimize the potential for accidental release of hazardous materials.

## **B. Effects on Critical Habitat**

The NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. The proposed action area would occur within designated critical habitat for OC coho salmon.

The presence of the Fluge residence and other bank development in the area affects critical habitat in the long-term by restricting natural channel forming processes, altering stream hydrology, reducing riparian vegetation, increasing stream temperature, and reducing allochthonous input. In addition, Peters *et al.* (1998) found that densities of juvenile coho salmon were generally reduced at riprapped sites when compared to areas containing large woody debris or undercut banks. Willows planted within and around the riprap may provide limited shade, cover, and allochthonous input in the long-term.

Short-term impacts resulting from the proposed action could occur from turbidity and debris contribution to the waterway during construction activities and storm events during construction. These effects would be largely ameliorated by project timing (i.e., dry season) and work site isolation.

The project proposes to improve current conditions as a result of increasing the channel profile, incorporating *irregular* contours to the slope face, and vegetating the bank revetment. These aspects would serve to increase the channel capacity, provide some velocity dissipation, and offer some riparian

function to the embankment. While limited in scope and not a restoration of habitat function, this action represents an improvement to conditions in place for the past 60 years.

### **C. Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

The NMFS is not aware of any future non-Federal activities within the action area that would cause greater impacts to listed species than presently occurs. The NMFS assumes that future private and state actions will continue at similar intensities as in recent years.

## **VI. CONCLUSION**

Based on the available information, NMFS has determined that the proposed action is not likely to jeopardize the continued existence of OC coho salmon or adversely modify designated critical habitat. In reaching this conclusion, NMFS determined that the survival and recovery of OC coho salmon would not be appreciably diminished by the proposed action. In summary, our conclusion is based on: (1) All work would occur in the dry; (2) The existing retaining wall would remain in place until the riprap embankment has been constructed, which would minimize effects on OC coho salmon in-stream habitat and minimize displacement of rearing juvenile OC coho salmon should any be present in the proposed action area during construction; (3) removal of the existing retaining wall and dock structure would occur during an ODFW sanctioned in-water work window of July 1-September 15, which would minimize the presence of migrating and spawning OC coho salmon at the project site and allow work to occur during the dry season; (4) the riprap embankment would be vegetated with native willow plantings and would achieve an 80 percent survival success after 3 years; (5) potential effects from chemical contamination would be minimized or possibly eliminated as all refueling and servicing would not occur near any water bodies and equipment would be free of leaks and contaminants; (6) placement of riprap would not restore natural function to the streambank in the short-term, but current conditions at the site do not provide functional habitat and the addition of riparian vegetation may provide shade and allochthonous input in the long-term; and (7) increasing the channel profile would contribute to improving the discharge capacity of the river.

## **VII. CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information.

The NMFS recommends that due caution be taken to prevent failure of the existing retaining wall during construction of the riprap embankment, that the top layer of pit-run rock be omitted from the proposed design, and that willow plantings occur in consultation with a qualified botanist.

Isolation of the work site from the wetted channel, achieved by leaving the retaining wall in place during construction of the riprap slope, has significantly influenced this analysis of potential impacts resulting from the proposed action. The assumption has been made by the NMFS that the applicant has established that the integrity of the wall would not be unduly compromised by the lack of supporting material.

The function of the *dirty* pit-run rock layer is not readily apparent. Willow plantings should not be rooted in this surface layer and displacement of the material is anticipated. The willow posts need to be rooted in the soil below the rock embankment. Furthermore, inundation of the layer by tidal cycle and/or flood events are likely to displace the light material. The NMFS would prefer that this aspect of the proposed project design be omitted. If site hydraulics favor accumulation of fines or other materials, deposition shall occur incidental to the proposed action.

Lastly, achievement of planting success is highly dependent upon the methodology employed. Prior to commencing construction, the development of a planting plan is suggested. Such a plan, developed in corporation with a botanist experienced in planting within riprap, would greatly increase the likelihood of achieving the required 80 percent survival.

## **VIII. REINITIATION OF CONSULTATION**

Reinitiation of consultation is required: (1) If the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

## IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on the best scientific and commercial data available. This section identifies the data used in developing this Opinion.

Nickelson, T.E., J.W. Nicholas, A.M. McGie, R.B. Lindsay, D.L. Bottom, R.J. Kaiser, and S.E. Jacobs. 1992. *Status of anadromous salmonids in Oregon coastal basins*. Oregon Department of Fish and Wildlife, Research Development Section and Ocean Salmon Management, 83 p. Oregon Department of Fish and Wildlife, P.O. Box 59, Portland.

Oregon Department of Environmental Quality (ODEQ). 2000. *Oregon's Final 1998 Water Quality Limited Streams - 303(d) List*. <<http://waterquality.deq.state.or.us/WQLData/RecordID98.asp?recordidreq=2972>>. Accessed on May 30, 2000.

Peters, Roger J., Brian R. Missildine, and David L. Low. 1998. *Seasonal fish densities near river banks stabilized with various stabilization methods*. U.S. Fish and Wildlife Service, Lacey, Washington. 32p.

Portland State University (PSU). 1999. *DRAFT Nehalem River Watershed Assessment*. PSU, Environmental Sciences and Resources Department, Portland, Oregon. [Page count unknown].

Spence, B.C., G.A. Lomnický, R.M. Hughes, and R.P. Novitzki. 1996. *An ecosystem approach to salmonid conservation*. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, Oregon. URL <<http://www.nwr.noaa.gov/1habcon/habweb/ManTech/front.htm>>. 356 p.

United States Army Corps of Engineers (COE). 1977. *Nehalem Wetlands Review: A Comprehensive Assessment of the Nehalem Bay and River (Oregon)*. U.S. Army Engineer District, Portland, Oregon. [Page count unknown].

United States Geological Survey (USGS). 2000. *Nehalem River Near Foss, Oregon (14301000)*. URL <<http://waterdata.usgs.gov/nwis-w/OR/?statnum=14301000>>. Accessed on May 26, 2000.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. *Status review of coho salmon from Washington, Oregon, and California*. U.S. Dep. Commer., NOAA Tech Memo. NMFS-NWFSC-24, Northwest Fisheries Science Center, Seattle, Washington. 258 p.

Western Regional Climate Center (WRCC). 2000. *Nehalem 9 NE, Oregon (355971): Period of Record General Climate Summary - Precipitation*. URL <<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?orneha>>.

## **X. INCIDENTAL TAKE STATEMENT**

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

### **A. Amount or Extent of Take**

The NMFS anticipates that the proposed action covered by this Opinion has more than a negligible likelihood of incidental take of juvenile OC coho salmon resulting in the long term from removal of potential natural rearing habitat due to the use of riprap. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long term effects on the species' population levels. The effects of these activities on population levels are also largely unquantifiable and not expected to be measurable in the long term. This is because the impacts are relatively small and not expected to appreciably add to cumulative effects.

Therefore, even though NMFS expects some low level of incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as this, the NMFS designates the expected level of take as unquantifiable. Based on the information provided, NMFS anticipates that an unquantifiable but low level of incidental take could occur as a result of the action covered by this Opinion. Moreover, the small amount of take that may occur is expected to be non-lethal.

## **B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities within the proposed action area, measures shall be taken to limit the duration and extent of in-water work, and to time such work to occur when the impacts to fish are minimized.
2. To minimize the amount and extent of incidental take from construction activities in or near watercourses, effective erosion and pollution control measures shall be developed and implemented to minimize the movement of soils and sediment both into and within watercourses and to stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and in-stream habitat, or where impacts are unavoidable, to replace lost riparian and in-stream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures shall be monitored and evaluated both during and following construction and meet criteria as described below in the terms and conditions.

## **C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. In-water work:
  - a. All work shall occur in the dry (no exceptions).
  - b. In order to isolate the work area from the river, the existing concrete retaining wall shall remain in place until the riprap bank construction has been completed.
  - c. All work shall be completed within an ODFW sanctioned in-water work period of July 1 to September 15.
  - d. Alteration or disturbance of stream banks and existing riparian vegetation shall be minimized.

## 2. Erosion Control

- a. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls shall be used on all exposed slopes during any hiatus in work exceeding 7 days.
- b. All erosion control devices shall be inspected during construction to ensure that they are working adequately.
- c. If applicable, silt fences or other detention methods shall be installed to reduce the amount of sediment entering aquatic systems.
- d. A supply of erosion control materials (e.g., straw bales and clean straw mulch) shall be kept on hand to respond to sediment emergencies.
- e. Material removed during excavation shall only be placed in locations where it cannot enter sensitive aquatic resources. Conservation of topsoil (removal, storage and reuse) shall be employed.

## 3. Pollution Control

- a. All equipment shall work from above the bankline and shall not enter below the ordinary high water or mean high-high water elevation.
- b. No pollutants of any kind (petroleum products, silt, etc...) shall come in contact with the area below the ordinary high water or mean high-high water elevation.
- c. All equipment shall be fueled and cleaned off-site in an appropriate upland area.
- d. Water used during concrete sawcutting shall be contained and prevented from entering the waterway.
- e. Measures shall be taken to prevent construction debris from falling into any aquatic resource. Any material that falls into a stream during construction operations shall be removed in a manner that has a minimum impact on the streambed and water quality.
- f. Project actions shall follow all provisions of the Clean Water Act (40 CFR Subchapter D) and Oregon Department of Environmental Quality's (DEQ) provisions for maintenance of water quality standards not to be exceeded within the Nehalem River (OAR Chapter 340, Division 41).



Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed DEQ water quality standards.

- g. The Contractor shall develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The PCP shall include the following:
  - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pits operations, haul roads, equipment storage sites, fueling operations and staging areas.
  - ii. A spill containment and control plan that includes.
- h. No surface application of fertilizer shall be used within 50 feet of any aquatic resource as part of this permitted action.

#### 4. Monitoring

- a. The finished grade and elevations shall be inspected to assure irregular contours were incorporated into riprap embankment.
- b. Planted areas shall be monitored to assure plantings were performed correctly and have an 80 percent or better success rate after 3 years.
- c. Failed plantings and structures shall be replaced, if replacement would potentially succeed.
- d. Supporting photo documentation of the site and a written statement of any additional plantings shall be provided annually for three years to the NMFS to assist in assuring planting success.